

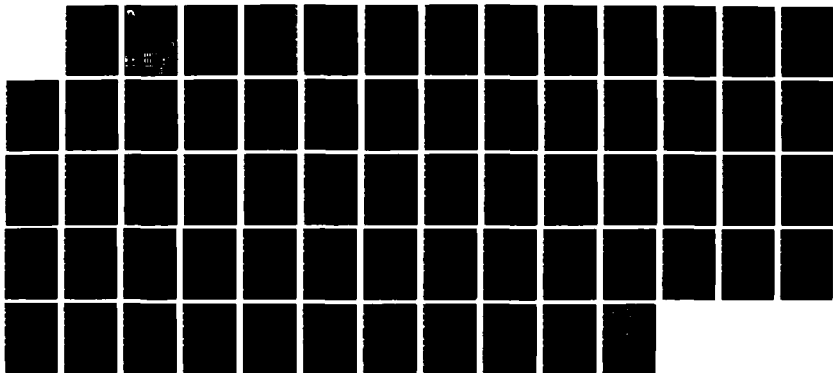
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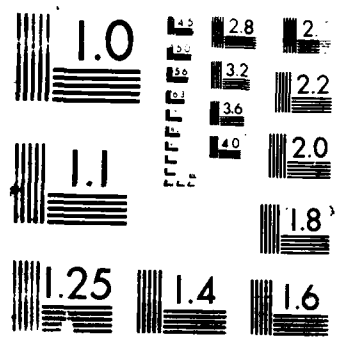
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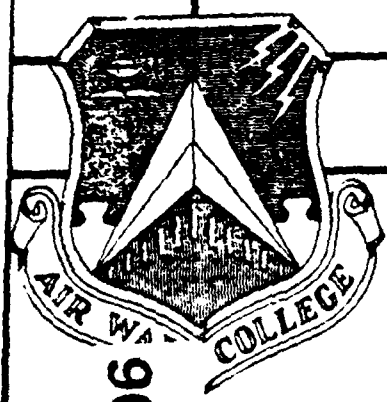
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## RESEARCH REPORT

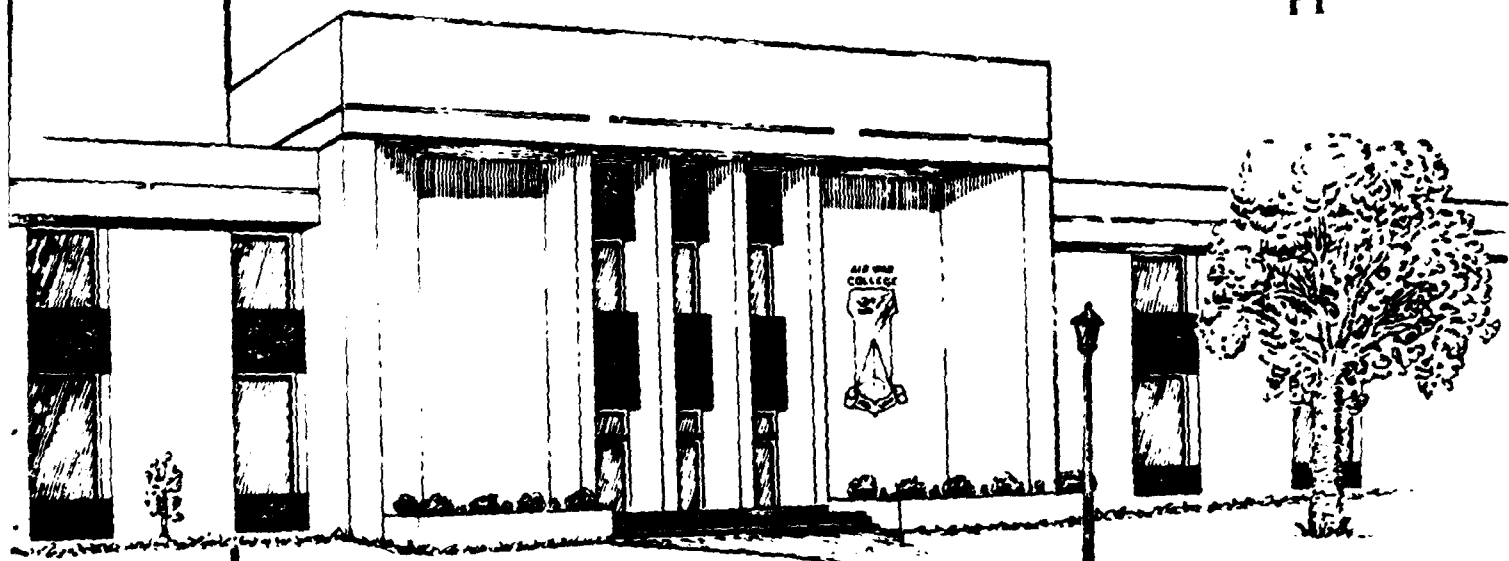
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CAN THE 'SAF'S SECURITY ASSISTANCE SYSTEM  
PROVIDE THIRD WORLD CLIENT'S NEEDS?

By COLONEL THOMAS D. SCHOEGLER

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CAN THE USAF's SECURITY ASSISTANCE SYSTEM PROVIDE THIRD WORLD  
CLIENT's NEEDS?

by

Thomas D. Schoegler  
Colonel, USAF

A RESEARCH REPORT SUBMITTED TO THE FACULTY  
IN  
FULFILLMENT OF THE RESEARCH  
REQUIREMENT

Thesis Advisor: Dr. Barton J. Michelson  
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MAXWELL AIR FORCE BASE, ALABAMA

March 1987



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AIR WAR COLLEGE RESEARCH REPORT ABSTRACT

TITLE: Can the USAF's Security Assistance System Provide Third World Client's Needs?

Author: Thomas D. Schoegler, Colonel, USAF

The paper will examine Third World weapon sale trends to include superpower competition. Time will be spent looking at key differences and characteristics of the Soviet versus the U.S. security assistance programs in the Third World.

Next, the paper will address the inherent impediments to technology transfer to underdeveloped countries. Included will be the cultural influences on implementing a sophisticated weapons system in the Third World.

An attempt is made to quantify the infrastructure needs in the Third World, and how the Air Force can go about providing these needs. To this end, several conclusions will be offered about the USAF's organization that will have to meet the Third World infrastructure requirements.

#### BIOGRAPHICAL SKETCH

Colonel Thomas W. Schoegler (M.S.E., University of Northern Colorado) has been interested in the Third World since assigned as the Country Director of the Defense Security Assistance Agency in 1978. He managed the Egyptian Security Assistance Program from the Camp David period until 1985. During this period the Egyptian Security Assistance Program grew to over eight billion dollars. Colonel Schoegler made over thirty trips to the Middle East in various capacities. He holds the Defense Superior Service Medal. Colonel Schoegler will graduate from the Air War College, class of 1987.

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## CHAPTER I

### INTRODUCTION

The struggle between arms suppliers in the world has centered around projecting superpower national objectives. The central national objective for the Soviet Union in the Third World is highlighted by Brezhnev's statement in 1973.

Our aim is to gain control of the two great treasure houses on which the West depends: the energy treasure house of the Persian Gulf and the mineral treasure house of central and southern Africa.<sup>1</sup>

It is from this stimulus surrounding Soviet goals to spread their influence that the struggle for control in the Third World has intensified between the superpowers in the last decade. The Soviet foreign assistance is characterized by military rather than economic aid to achieve their stated goals. The Soviet's have continued to concentrate their military aid in areas of high instability. They have fostered instability through their military support in regional conflicts (Arab-Israeli, Southeast Asia, Ogaden, Libya, and Nicaragua), insurgencies (Central America, Philippines, and Western Sahara), and the support of

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<sup>1</sup>U.S. Congress. House, Joseph Korth statement before the Subcommittee on International Relations of the Committee on Foreign Affairs, 19 July 1978, p. 11.

terrorism.<sup>2</sup> World statistics for sales to the Third World place the Soviet Union first among all nations with 32 percent of the market share.<sup>3</sup>

This market share is important when trying to understand the magnitude and importance of developing countries to U.S. foreign policy by examining the FY 1985 Congressional Presentation Document for Security Assistance. It states:

The United States has multiple interests--economic, political and strategic--involving the developing world. Approximately 40 percent of total U.S. exports are to less developed countries, while U.S. industry depends on imports of primary commodities, minerals and petroleum from those same areas.<sup>4</sup>

The FY 1987 Congressional Presentation Document further defines U.S. interests in providing security assistance.

One U.S. national objective is:

To assure our own and the free world's security, and to avoid war, the United States seeks first to deter aggression and--should this effort fail--to ensure that we and other nations can mount an adequate defense to frustrate aggressive designs. We also seek to

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<sup>2</sup>U.S. Department of Defense, Congressional Presentation for Security Assistance Programs, FY 1987. (Washington, D.C.: U.S. Government Printing Office, 1986), pp. 10-11.

<sup>3</sup>Stockholm International Peace Research Institute (SIPRI) World Armaments and Disarmament SIPRI Yearbook 1986 (London: Taylor & Francis, 1986), p.325.

<sup>4</sup>U.S. Department of Defense, Congressional Presentation, Security Assistance Programs, FY 1985. (Washington, D.C.: U.S. Government Printing Office, 1985), p. 1.

safeguard our friends and allies from coercion and intimidation. As a complement to our own defense posture, we rely on formal alliances and other cooperative relationships in which other nations' resources and collectively to our own to protect shared interests. To be effective, our mutual defense ties must be long-term and the participants must be strong and confident.

The economic well-being of the United States and material progress for all peoples are equally essential goals. This requires international commerce of vital resources, as well as mutually beneficial financial, trade, and investment ties.<sup>5</sup>

How well the U.S. is meeting its stated goals will be the focus of this paper? Are there deficiencies in the United States Air Force's (USAF) security assistance program to underdeveloped countries? Are there indicators in developing countries today which should be examined and assessed to determine if our security assistance objectives are being met? What are the sales trends in the developing world? If there are deficiencies, what can the USAF security assistance program do to shore up these limitations?

An examination of the United States' Third World assistance program in relationship to other key suppliers will provide some important trends to be considered by U.S. policy makers. The role the U.S. plays in the Third World arms race should be clear. Competition is keen and the indicators show the future will see a further struggle for

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<sup>5</sup>Congressional Presentation for Security Assistance Program FY 1987, op. cit., p.9.

influence in underdeveloped countries through the medium of arms transfers. It is becoming a buyers market. The U.S. will find it ever increasingly difficult to pursue its national objectives in the Third World. Third World countries simply have more choices for arms, and the competition is keen. Therefore, the U.S.'s security assistance system must provide the most credible service it can in order to fulfill national objectives.

## CHAPTER II

### THIRD WORLD WEAPON TRANSFER TRENDS

Overall arms sales to underdeveloped countries have declined during the recent past (1980-85). The decline started slowly (1980-82), but sharpened in 1983 with continued stagnation and decline during 1984-85.<sup>6</sup> Economic factors coupled with market saturation are the principal causes for the decline in arms transfers to the Third World.

In the 1970s, the rise in oil prices led to the flow of petro-dollars which Western banking organizations lent to Third World countries. However, by the late 1970s, countries were having to borrow new money externally to pay interest on old debts. There was clear evidence by the early 1980s that countries were getting into trouble with their external debt burden. Between 1974 and 1978 there was an annual average for world-wide country debt re-scheduling of four, however this dramatically increased in 1983 to 32 world-wide debt re-schedulings and a decline in new lending to developing countries that continues today.<sup>7</sup>

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<sup>6</sup>SIPRI 1986, op. cit., p. 323.

<sup>7</sup>External Debt of Developing Countries, 1983 Survey(Paris: Organization for Economic Co-Operation and Development (OECD), 1984), Table D, p. 28.

Other indicators show the effects of increased oil prices on non-oil-producing developing countries. The oil bill of these developing countries rose from \$5 billion in 1975 to \$67 billion in 1982.<sup>8</sup> At the same time the value of arms transfers to the non-oil-producing developing countries more than doubled in real terms between 1972 and 1982, and their share of total world arms transfers increased from 31 to 41 percent in the same period.<sup>9</sup> This combined affect caused strain on countries' balance of payments that had an accumulative affect in the 1970s.

Today the weapons buying trends are reversing. Petro-dollars are not flowing as they did in the 1970s, and the arms transfer trends reflect this fact. Throughout the world there are indications that debt burden pressures have slowed or resulted in countries reallocating monies previously designated for armaments. This trend should continue as the oil market remains soft and arms supplier nations come under pressure to cut back their foreign assistance grants and loans. However, despite these trends, it remains a fact that about 64 percent of the

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<sup>8</sup>W. R. Cline, International Debt and the Stability of the World Economy (Washington, D.C.: Institute of International Economics, 1983), pp. 20-22.

<sup>9</sup>U.S. Arms Control and Disarmament Agency (ACDA), World Military Expenditures and Arms Transfers, (Washington, D.C.: U.S. Government Printing Office, 1985), pp. 6-7.

total arms trade during 1983-85 was conducted in the Third World.<sup>10</sup> One major reason for this, is the interplay of the superpowers in the struggle to influence developing countries to suit superpower foreign policy and economic objectives, and the continued Iraq invasion.

The statistics on arms transfers to the U.S. and Soviet Union show the heavy involvement and competition by both countries.

When equipment deliveries per year are used to determine market share, the U.S. and Soviet Union are the largest suppliers to the Third World. Figure 1 displays the supplier trends over the period from 1965-1985. It should also be pointed out that the actual U.S./Soviet Third World market share has been in decline in recent years. This could not be more evident than when examining the statistics for deliveries to developing countries. The U.S./Soviet Third World market share is down from 69 percent for 1978-1982 to 59 percent in 1981-1985.<sup>11</sup>

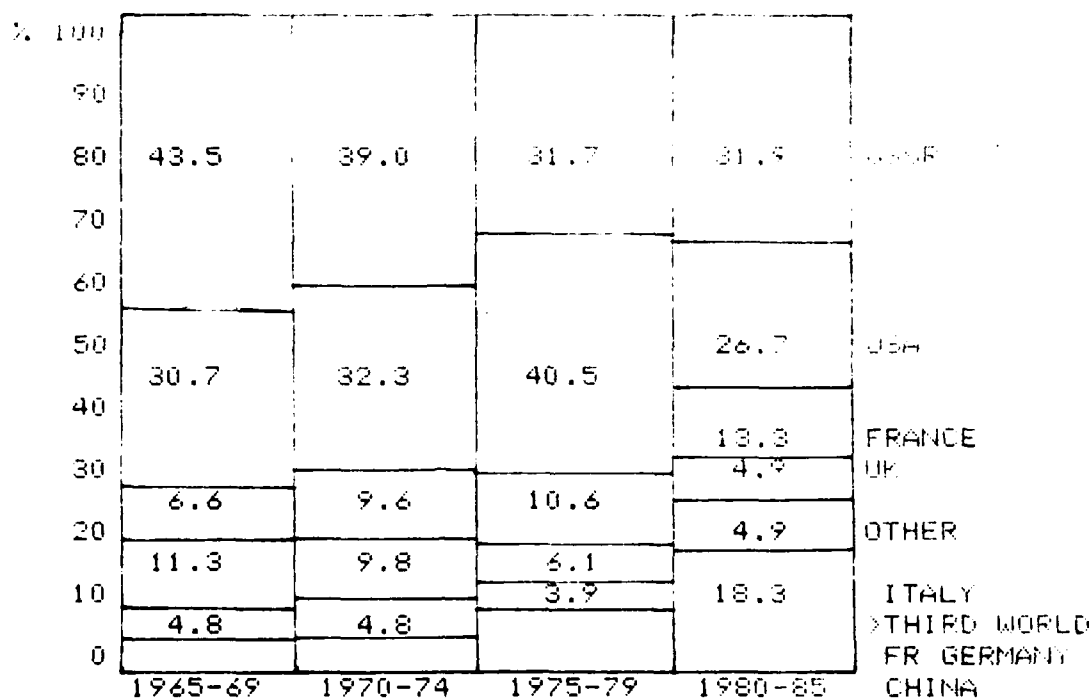
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<sup>10</sup> SIPRI 1986, op. cit., p. 325.

<sup>11</sup> Ibid.

FIGURE 1

PERCENTAGE SHARES OF EXPORTS OF MAJOR WEAPONS TO THE THIRD  
WORLD REGIONS LISTED BY SUPPLIER, 1965-85<sup>12</sup>



France has consolidated its third-place with an increase to 13.3 percent, followed by the United Kingdom, the Federal Republic of Germany and Italy. These four western countries now account for 28 percent of arms exports to the Third World. Not displayed separately in Figure 1, but gaining in their market share are China, Israel, and Brazil. These countries are gaining slowly in their exports to the Third World because they impose fewer conditions than the superpowers, and their products are

<sup>12</sup>Stockholm International Peace Research Institute (SIPRI) World Armaments and Disarmaments SIPRI Yearbook 1985 (London: Taylor & Francis, 1985), p. 348.

more suited to the Third World.<sup>13</sup> The final comparison will review activities in 1984-85 from several sources.

Statistics for 1985 arms transfers agreements concluded by major suppliers reveal interesting facts. First, neither the U.S. nor the Soviet Union was the number one supplier to the Third World in 1985. Second, according to "Strategic Analysis", The United Kingdom held the top position for 1985. Britain captured \$7.73 billion of the \$22.95 billion total for the Third World in 1985.<sup>14</sup>

There is understandable disagreement among the different sources for these statistics. No one standard is used for accumulating these facts, and information for the Soviet's arms transfers is almost always estimated. Some sources use actual equipment deliveries while others use arms agreements per year.

The U.S. Arms Control and Disarmament Agency's annual report for 1985 on world arms transfers places the Soviet Union first in 1984, followed by France and then the

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<sup>13</sup>SIPRI 1986, op. cit., p. 325.

<sup>14</sup>Sheedhan, Arms Transfers to the Third World in 1985 (London: Strategic Analysis, July 1986), pp. 433-435. Statistics were gathered by Strategic Analysis for calendar year 1985. When data regarding cost of the transfer was not available, an estimate was used based on prices listed in Aviation Studies Atlantic (London). Eastern Block and Soviet transfer data in many cases was computed on the basis of cost of similar equipment from the West, which is likely to be somewhat high compared to actual value transferred. Data included weapon sales, support equipment, infrastructure facilities, and training.

U.S. for arms transfers and agreements to developing nations.<sup>15</sup> Table 1 displays this information.

TABLE 1  
ARMS TRANSFER AGREEMENTS, 1984, BY SUPPLIER  
(IN BILLIONS OF CURRENT DOLLARS)<sup>16</sup>

Soviet Union	10.6
France	9.4
U.S.	7.7
Other non-Communist	2.2
Other Warsaw Pact	.9
Other Communist	.7
Italy	.5
Other NATO	.5
United Kingdom	.4
West Germany	.3

It is apparent the U.S. was not first among nations for exports of arms to the Third World in the most recent statistics. This trend for the U.S. stems, in part, from Congressional opposition to Middle East arms sales which has discouraged potential agreements with Saudi Arabia, Kuwait, Jordan, and Bahrain. There is little doubt that the Middle East continues to be the largest Third World region for arms, especially when the percentage of military spending in relation to gross national product is considered. The Middle East countries that spend more than 10 percent of their Gross national Product on the military include: Saudi Arabia, Qatar, Israel, Oman, Libya, Jordan,

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<sup>15</sup>ACDA, op. cit., p. 42.

<sup>16</sup>Ibid.

Syria, North and South Yemen.<sup>17</sup> This spending trend can be partially explained by the increased threat to the region from the prolonged Iran-Iraq war and by the forty years of hostilities between Israel and her neighbors. The Gulf Cooperative Council (GCC) states (Bahrain, Oman, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirate), fearful of a rise in Islamic fundamentalism, have moved to strengthening their military capabilities. Iraq and Iran, now fighting for the seventh straight year, represent 44 percent of all arms sales in the Middle East in 1984. The GCC is close behind with 30 percent.<sup>18</sup> Similar trends are found for 1985.

In 1985, the total dollar value of arms contracted for in the Third World was \$22.95 billion.<sup>19</sup> A regional examination shows that the Middle East continues to be the dominant market as can be expected. The top three buying countries are listed for 1985 in the next table.

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<sup>17</sup>Ibid., p. 7.

<sup>18</sup>Ibid., pp. 52-88.

<sup>19</sup>"Strategic Analysis", op. cit., p. 433.

TABLE 2  
LEADING MIDDLE EAST COUNTRIES FOR ARMS  
TRANSFERS IN 1985<sup>20</sup>

Saudi Arabia	8.3
Iraq	4.0
Iran	2.1

The largest share of the sales in 1985 went to Saudi Arabia. Out of the \$16.95 billion of sales to the West Asian countries, Saudi Arabia alone accounted for nearly 50 percent followed by Iraq and Iran.<sup>21</sup> An overall regional listing of arms transfer contracts for 1985 was published by "Strategic Analysis" and is displayed in Table 3.

TABLE 3  
REGIONAL ARMS CONTRACTS IN 1985<sup>22</sup>

<u>REGION</u>	<u>VALUE (\$ BILLION)</u>
East Asia	1.725
South Asia	1.113
Southeast Asia	1.602
West Asia	16.959
Africa	.460
Latin America	1.053
Central America	.040
TOTAL	22.952

In East Asia, the People's Republic of China followed by South Korea, and Taiwan were reported as

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<sup>20</sup>Ibid., p. 435.

<sup>21</sup>Ibid., p. 434.

<sup>22</sup>Ibid.

the leading importers of arms. The People's Republic of China constituted 70 percent of this regions arms imports and over 5 percent of the arms imports by the Third World in 1985.<sup>23</sup> China has started a large scale project to import high technology into its arms industry, and this fact probably accounts for China's relatively large share of imports.

The last table to be reviewed will display the top ten countries that imported arms in 1985. There are no surprises after examining the regional leaders.

TABLE 4  
TOP TEN COUNTRIES IN 1985 FOR ARMS IMPORTS<sup>24</sup>

<u>COUNTRY</u>	<u>VALUE (\$ BILLION)</u>
Saudi Arabia	8.277
Iraq	3.970
Iran	2.170
China	1.285
Pakistan	1.252
Abu Dhabi	.828
Peru	.800
Egypt	.682
Thailand	.444
Oman	.403

Table 4 shows once again that the Middle East is the most active area for weapon transfers. Six of the top ten are Middle East countries.

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<sup>23</sup>Ibid.

<sup>24</sup>Ibid., p. 435.

This review of the data was intended to illustrate the magnitude of arms transfer business in the Third World. It is unlikely that these trends will appreciably change in the future. The Third World will continue to dominate the arms market. The continued high threat will place pressure on the Third World, and therefore, arms will continue to flow.

The U.S. cannot ignore the fact that it will be in the Third World where competition between the superpowers will occur, not only in the form of arms transfers, but in low intensity conflict as well. U.S. Foreign Military Sales (FMS) institutions must be geared to satisfy the special needs in the developing nations. Foreign Military Sales cannot be one of the U.S. foreign policy instruments unless it is effective. The Third World offers challenges beyond the immediate problems associated with sophisticated technology transfer in the developing world, be it commercial or military. It is how well the U.S. system meets these challenges that will determine U.S. foreign policy success. In this regard, the USAF plays a pivotal role as USAF's systems that are transferred to countries are generally more sophisticated than others transferred by the U.S. army. The U.S. Navy has very few affordable systems that are sold to the Third World compared to the U.S. Army and Air Force, and therefore, has a very small

role in security assistance worldwide. Before turning to the impediments to technology transfer, the differences between the two security assistance systems of the U.S. and Soviet Union will be helpful to understand. These two systems have major differences in philosophy and scope when dealing with client countries.

## CHAPTER III

### EAST VERSUS WEST

Given superpower competition in the Third World, it is important to understand the differences in the strengths and weaknesses of the U.S. and Soviet Union security assistance delivery systems.

Recent events in the Middle East point once again to the superior performance of U.S.-equipped forces over those equipped by the Soviets. Libya's attempt to shoot down our Sixth Fleet aircraft on 24 March 1986 was a clear failure on the part of Soviet-equipped and trained forces. Moreover, this was demonstrated before during the Syrian/Israeli encounters where exchange ratios between U.S. and Soviet-equipped forces approached 80:1 in the favor of U.S. equipped forces. However, it would be wrong to think that equipment superiority was the key factor in this exchanges. Other factors, such as training, doctrine, strategies, etc., play a pivotal role in these success stories. Certainly the Israeli's success was due in large part to its Command, Control, and Communications, Intelligence (C<sup>3</sup>I), electronic countermeasures, and counter-countermeasures.

Recent history has shown that matching U.S. or Israeli military personnel against Third World adversaries

produces a lopsided contest. In these cases a more detailed analysis must be performed before any generalizations can be made on the merits of East versus West. A superior weapon can only tip the balance slightly in a conflict if all other factors are comparable. Usually cultural, societal, economic, political and religious factors have a much more important impact on the outcome of conflict than do weapons capabilities alone. Military superiority is a function of, not only, equipment quality, but also, military strategy, morale and national will. It can be argued that the importation of high tech weapons without the corresponding absorption of tactics, training, and logistics capability can lead to inefficient employment.

The Vietnam war was an excellent example of an instance when better-equipped forces did not affect the war's outcome. North Vietnamese and Viet Cong forces used a systematic strategy to ascertain American will to continue the war. At the same time, U.S. forces were unable to instill in the South the will to fight and defend themselves or their country. The 1968 Tet offensive, although a disaster for North Vietnam, proved to be a strategic victory as U.S. patience ran out, and public pressure started to mount for us to disengage from the war. The

rest is history as we saw the superior equipped South lose the war.

The Falklands War also proved the importance of intangibles. The British prevailed due to better trained personnel, superior tactics, and strategy. These negated Argentina's advantages in numbers and technology. The British had well-entrenched defensive positions, short supply lines, and reasonably sophisticated equipment. Once again military technology was proven to be less crucial than organization, training, and fighting skill.<sup>25</sup> This is also true in the fighting between Iran and Iraq. Iraq has demonstrated the limitations of high technology without effective absorption. Iraq although equipped with new superior weapons is threatened by Iranian successes.

As Mr. Andrew K. Semmel, former Chief, Analysis Division, Defense Security Assistance Agency, has said:

The key issue is how Third World countries make what they acquire work for them. The serious analyst would also look at intangibles, such as training, technical assistance, command and control, organization, and operations and maintenance, which are equally, if not more, important measures of capability.<sup>26</sup>

Also added to this list of intangibles should be cultural affects on absorbing high technology. Therefore,

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<sup>25</sup>Rodney W. Jones, Modern Weapons and Third World Powers (Boulder, Colorado: Westview Press Inc., 194), p.65.

<sup>26</sup>Andrew K. Semmel, "The Realities of Third World Assistance Programs," Defense 85, January 1985, p. 12.

simple comparisons are not wise or meaningful in the Third World. Only a more detailed analysis will help answer questions created by Third World performance differences. With this as a goal, we will now review the radical differences between the U.S. and Soviet weapon transfer assistance to the Third World.

The differences between the two superpowers starts at their basic objectives, and flows from there to the question of non-alignment, or neutrality. The Soviet Union uses its military transfers to create dependence on the part of the recipient. The U.S.'s main objective is to teach the recipient how to function independently or have individual "self-sufficiency".<sup>27</sup> This very basic difference carries through, and reaches all aspects of the two transfer systems.

The Soviet transfer systems as a package (turnkey operation), including all the items needed to employ the weapon. Little flexibility is allowed Soviet client states regarding delivery schedule or support. The Soviets will withhold spare parts and assign large number of advisors/technicians to recipient countries.<sup>28</sup> The level

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<sup>27</sup>Noel C. Koch, "Third World Problems & International Security," Defense 84, February 1985, pp. 16-42.

<sup>28</sup>Noel C. Koch, "Cockpit of Conflict," Defense 86, March/April 1986, p.42.

of logistics support, number and types of manuals, advisors, munitions, etc. are not negotiable. The Soviets prefer to maintain the equipment, thus ensuring dependency. The Soviets assume the decision-making role, and there is no attempt to impart the methodology used in determining support levels to Soviet customer countries.<sup>29</sup>

However, the Soviet transfer method does help counteract some of the deficiencies found in the Third World with one great exception that will be addressed later. Third World countries are extremely limited in trained manpower, and the Soviet system of performing tasks normally the responsibility of the recipient country assists in filling this gap. It takes the responsibility away from the client's defense officials, who have limited staffing capability to accomplish the analytical analysis needed to determine support and operational requirements. This, of course, causes dependency which fulfills Soviet objectives.

The numbers of Soviet advisors and technicians provided the Third World are significant. Table 5 displays

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<sup>29</sup>This could not have been more evident than in Egypt when we started our relationship in 1979. We found Egyptians trying to purchase five years of spare parts because of their experience with the Soviet system. We would find Egyptian technicians holding reparable spare parts because their experience with the Soviets taught them that either they would not get the necessary spare parts to begin with, or reparable spare parts would not be returned.

the magnitude and trend of Soviet advisors in the Third World. The statistics just for the Middle East show that the trend for increased Soviet advisors in underdeveloped countries is increasing in parallel with the increasing use of Soviet surrogates, such as Cuban advisors in Africa.

TABLE 5

SOVIET & EASTERN BLOCK MILITARY TECHNICIANS IN THE MIDDLE EAST<sup>30</sup>

	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1983</u>
ADVISORS	2,105	8,840	5,905	7,615	11,850

Recent worldwide Soviet advisors have been put at between 22,000-25,000. This does not include Soviet forces in Afghanistan, and does not include surrogates, such as the 35,000 Cubans in Angola. These numbers are contrasted by the U.S. presence in the Third World with a little over 600 advisors.<sup>31</sup>

These large numbers of Soviet advisors serve to off-set the extreme trained manpower limitation in the Third World. The large scale Soviet presence is beneficial to client states in providing a minimum combat capability

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<sup>30</sup>U.S. Central Intelligence Agency (CIA), National Foreign Assessment Center, Communist Aid Activities in Non-Communist Less Developed Countries, 1979 and 1954-79, ER 80-10318U, October 1980, p. 6.; CIA, Directorate of Intelligence, Handbook of Economic Statistics, 1984: A Reference Aid, CPAS 84-10002, September 1984, pp. 114-15. This statistic excludes Afghanistan.

<sup>31</sup>Koch, Defense 86, op. cit.

with few trained nationals. However, employing large numbers of Soviet technicians to perform basic support functions does not assist a country toward self-sufficiency. This approach, does however, take the burden for program success away from the client state. Any failures can easily be blamed on the Soviets. In many Third World countries this responsibility shift, is in fact, a perfect cultural match (shifting or avoiding responsibility is a common culturally-based tendency in the Third World). This was seen in Egypt during the transition from Soviet-run programs (1955-73) to large scale U.S. involvement in 1979.

In the early days of our involvement in Egypt there was a constant struggle between Egyptian and U.S. officials over the need for Egyptian military officials to make key decisions for themselves. U.S. officials were frequently confronted with statements from the Egyptians that the Soviets had made these decisions before and that they did not understand why the U.S. could not respond in kind.<sup>32</sup> In early discussions with Egyptian officials it was not uncommon that budgetary decisions surrounding quantities and types of equipment to be purchased with available FMS credits were avoided by the Egyptians. The Egyptian

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<sup>32</sup>David R. Olds, "A Case Study: Peace Vector I (Sale of 40 F-16s to Egypt)," Air Force Journal of Logistics, Fall 1985, pp. 21-24.

response to discussions like these was, we do not want to talk about the budget constraints, here are our equipment demands, fill them in the next six months. This tactic was similar to the one used on the Soviets.

Also, during this transition it was difficult to persuade the Egyptians to grapple with the manpower required to support U.S. systems. There were many reasons for this; however, three stand out. First, Soviet weapon systems are simpler and require less manpower than U.S. systems, and second, the Egyptians were reliant on a large Soviet presence to maintain those systems which in turn lessened the need to train Egyptian soldiers in maintenance functions.<sup>33</sup> Third, and most importantly, there were not enough english language qualified technician available for training into the American programs.<sup>34</sup>

These examples point out why a large Soviet presence in the Third World has been helpful to client states. However, this large presence has not been without difficulty. Soviet technical advisors have been charged

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<sup>33</sup>Ibid.

<sup>34</sup>I recall when we first advised the Egyptian Air Force that they should plan on 700 trained technicians for thier F-4 program, they responded that only 100 were necessary. This 100 technicians corresponded to the number used for similar MIG operations in Egypt. Later it was obvious to the U.S. team that the Egyptians did not have 700 language qualified technicians available for training.

with various forms of bigotry, especially in Africa. The Soviets are reported as having superior attitudes. There are many documented incidents concerning Soviet attitudes toward Third World clients.

In Somalia, the racial attitudes of Soviet military advisors served to undermine their credibility with the Somalis.<sup>35</sup> While in Somalia, the Soviets practiced a form of apartheid. They did not mix or fraternize with the Somalis.<sup>36</sup> This is further validated by accounts from Egyptian officials about the attitudes of the Soviets during 1955-73, and has been confirmed by Third World students who have attended universities in Russia. African students at Moscom's Patrice Lumumba University faced widespread discrimination, reporting that they were consistently treated like second class citizens.<sup>37</sup> This problem has caused the Soviets to use more surrogates in roles that they previously performed themselves.

We can see the positive and negative facets of the Soviet security assistance system. They for the most part, have systems that require less maintenance, and most

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<sup>35</sup>Gary D. Payton, "The Lessons of Somalia," Military Review, January 1979, pp. 66-67.

<sup>36</sup>Brian Crozier, "Soviet Presence in Somalia," Conflict Studies, February 1975, pp. 4-5.

<sup>37</sup>Ibid.

importantly can function in austere environments. These weapons are optimal for the Third World where trained manpower availability, and facilities infrastructure are primitive.

The relative simple complexity of the Soviet systems also require less manpower to maintain it. This along with the presence of Soviet technical advisors allows underdeveloped countries to give the appearance of substantial military capability while their true capability and self-sufficiency are questionable, especially if Soviet advisors or surrogates withdraw. However, as has been noted before, the actual weapons performance depends on many variables.

I believe the Soviet system can best be described as putting "rubber on the ramp" in a way that does not threaten client states' endemic culture, but the Soviet system does little to help the client state toward future self-sufficiency or toward an indigenous combat capability.

This is contrasted by a U.S. desire to provide friends and allies a self-sufficient combat capability. The U.S.'s objective is to transfer all the items and skills necessary to make the program a success. With success defined as the ability of our friends and allies to employ their military forces for national interests, and to contribute to regional security.

This commitment, to assist our friends in the lesser developed nations toward self-sufficiency is a strong one, but difficult to implement. We must transfer not only the technical skills needed to maintain and support these weapons, but also, the operational training, and in most cases the complex infrastructure (country) needed to implement these programs. The challenge is to transfer these skills with a minimum U.S. military and contractor presence in the client country. Unfortunately, we are limited by the Foreign Assistance Act, with some exceptions, to keeping military presence in countries to an absolute minimum. Attempts to get relief from Congress on the total numbers of U.S. advisors in countries has consistently failed.<sup>38</sup>

Along with the training challenge is the fact that we transfer state-of-the-art technology. These weapons have been designed for U.S. forces using U.S. support and infrastructure systems. U.S. systems are technologically optimized in order to provide multiple capabilities from each platform, and this fact drives the level of technology in each system to the limit, and in turn, increases and complicates the requirements for support and training.

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<sup>38</sup>Koch, Defense 86, op. cit.

We do not produce major weapon systems specially tailored for transfer to our friends and allies, but rather we produce our own first-line weapons. Policies that have attempted to limit the level of transferred defense technology have totally failed. The most recent example is the F-16 (F-20) fighter being which proved to be a total failure. Foreign governments for various reasons had no desire for what is perceived to be a second-class fighter. Nor will our government refuse to transfer first-line equipment to the Third World. Therefore, F-16 and F-15 sales continue to be made to the Third World.

The U.S. military services are faced with trying to implement world-wide security assistance programs that require the transfer of not only the weapon system, but also the infrastructure needed to support that modern weapon system in the Third World. This requires not only transferring technical skills and support associated with the weapon system, but also a sophisticated support infrastructure. In the Western World necessary infrastructure is already in place, and for the most part is taken for granted.

The Third World has significant impediments (fixed and variable) in achieving true combat capability. Infrastructure requirements are most important, and can have a significant impact on combat capability, but all too

often they appear to be secondary to the immediate support considerations of the weapon system. Infrastructure factors are commonly overlooked or discounted as being unrelated to the program because they are not "core" support items. However, it is apparent that infrastructure considerations can have a major influence on technology transfer. An examination of these infrastructure considerations will be reviewed later in the paper. First, however, another factor, cultural impediments, which can affect technology transfer in the Third World will be reviewed. Cultural impediments are the most formidable challenge to any attempt at transferring technology in the Third World.

## CHAPTER 19

### THIRD WORLD IMPEDIMENTS TO TECHNOLOGY TRANSFER

Poor weapon system performance in the Third World can be blamed on many causes. In an ideal situation the USAF should be able to recommend a weapon system suited for the needs and capabilities of the recipient nation. The recommended weapon system with the associated technology has to be in the context of the client state's technical, economic, labor, social, cultural, and psychological conditions for system absorption. Unfortunately, this rarely happens as either political pressure or country desires define the choice rather than being based on the above factors. Therefore, the USAF is usually never in a optimal position from the very beginning of the program.

The USAF is typically faced with technological barriers like the absence of a transportation network within the country to move spare parts or other infrastructure problems. A more complete review of infrastructure problems will be done during the next chapter. There are also economic barriers where the recipient country cannot fund the needed country support items. However, the most difficult obstacle to technology transfer is cultural barriers, that is, those having to do with the fact that different norms and values may prevail

on both sides of the transfer process. On author gives five examples of these socio-cultural differences that affect a high technology transfer like those fielded by the Air Force.

1. Different value systems generate differing concepts of right and wrong, proper and improper.
2. Different economic systems generate differing attitudes toward such concepts as competition, labor and capital efficiency, and acceptable standards of living.
3. Different societies make different assessments of the relative merits of job security and advancement.
4. Social and family customs may differently affect interpersonal relations and the individual's attitude toward group activities.
5. Personal relationships differently affect organizational patterns.<sup>39</sup>

All these work together with the normal human resistance to change because of fear of the unknown, perceived threats to professional reputation, security, or to existing organizational structures.

Cultural impediments to technology transfer have been studied and discussed by anthropologists for years. Some anthropologists would argue that the ultimate success of any technical aid program in the Third World depends, in part, on the ability to predict the client's reaction to the proposed changes, and the ability to manipulate people to achieve a particular goal. This is a lofty objective,

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<sup>39</sup>Peter B. Heller, Technology Transfer and Human Values (New York: University Press of America, 1985), p. 75.

but anthropologists have believed for some time that they could greatly facilitate any technical aid program in the Third World through their knowledge of the recipient's culture. They believe they can understand and predict the impact of new situations on cultures and affect the acceptance of change.<sup>40</sup> This is, in my judgment and experience, much easier said than put into practice. In practice, the anthropologists may only be able to show where and why resistance is likely to be manifested toward innovation. It is quite another matter to actually affect a change in the culture.

Social change follows the line of least resistance. People are readily induced to adopt new ways by the prospect of immediate gain. They will throw off old fashioned restraints if the new method of technique offers them an escape from such restraints.<sup>41</sup> However, in most Third World situations there are overriding reasons why there are no incentives associated with the introduction of a new technology. For example, the cultural dynamics of envy, rivalry and favoritism, can mean that a Minister

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<sup>40</sup>George Foster, A Cross-Institute of Social Anthropology Cultrual Anthropolgy Analysis of a Technical Aid Program (Washington, D.C.: Smithsonian Institute, 1951), p. 6.

<sup>41</sup>Lucy Mair, Anthropology and Social Change, (New York: Humanities Press Inc., 1969), p. 9.

of Defense cannot afford to single out new systems and their assigned personnel for special treatment over other units. This can be the result of a mix of cultural and political reasons. A clear example of this phenomenon occurred in Egypt when the introduction of western weapon systems was overlaid on eastern block procedures and practices. It has been difficult, if not impossible, to convince Egyptian officials that special incentive pay for trained Egyptian personnel assigned to the western systems could produce increased productivity and raise their morale.<sup>42</sup> The real prohibitions were the cultural and political concerns of singling out one group for special treatment. This could not be justified in the Egyptian officials minds, nor could they risk the unrest from other sectors of their military which would have surely protested the perceived favoritism. Also, underlining all of this is the political constraints. If western systems were seen clearly as overwhelmingly superior to eastern block systems, internal political problems could result with Egyptian officials who try to maintain a balanced approach between the two superpowers.

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<sup>42</sup> Interview with Directorate of International Programs personnel, Deputy Chief of Staff, Programs and Resources, HQ USAF, Pentagon, December 1986.

Therefore a stagnate situation develops where cultural and political constraints preclude steps which would effect a change through incentives. Incentives will be examined later in this chapter.

The resistance to technology transfer in the Third world is the cultural conflict with the value system that is needed to master modern-day technology and high tech weapon systems. People prefer their traditional values over any new set that is being introduced along with high tech systems. It is this central theme that causes many of our security assistance programs in the Third World to inevitably fall short of our expectations and those of our clients.<sup>43</sup> Our real problem, in affecting performance is the need to change social systems and human attitudes; knowledge and human skills; physical implements in which modern weapon system technology is embodied. All these factors are complex and interrelated, but the USAF cannot be successful in implementing high tech weapon system transfers without finding means of overcoming these items to resistance to change.<sup>44</sup>

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<sup>43</sup>James W. Wiggins and Helmut Schoeck, Foreign Aid Reexamined A Critical Appraisal (Washington, D.C.: Public Affairs Press, 1958), pp.56-62.

<sup>44</sup>Graham Jones, The Role of Science and Technology in Developing Countries (London: Oxford University Press, 1971), p. 22.

One of the many examples where we see cultural values in conflict is in the Hispanic culture. In the Hispanic culture the belief that leisure time ennobles and labor, especially technical labor, degrades is prominent. This value toward high tech labor probably partially explains better than any other single factor why Latin American countries are in varying degrees backward in the material sense. This cultural example (Hispanic) points toward the fact that the way in which work and leisure are valued in a society have a direct and important relationship to the success of U.S. technical assistance aid programs.<sup>45</sup>

The implication, in this example, is that there is no incentive among the best educated in the Hispanic society to pursue careers in high tech. They will do enough to acquire the leisure which they seek, but no more. Using this principal, the Hispanic does not work up to full potential. Quite the contrary, they do everything possible to obtain shorter hours, more vacations, more security from discipline. I will not develop this further, but I would direct interested readers to James Wiggins and Helmut Schoeck's work in this area.

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<sup>45</sup>Wiggins and Schoeck, op. cit., p. 76.

Another example in a different culture, which reflects the same problem, is in the Arab world. The Egyptian F-16 aircraft program has experienced many work ethic problems. U.S. advisors report that the normal workday is a maximum of six hours and attendance at work is far below what would be acceptable to ensure a successful program.<sup>46</sup> The cause lies in the cultural and economic situation in Egypt. The Egyptian technician considers his workday to begin at the point when he departs from home and ends upon his return. Since few Egyptian technicians live on the air bases, the travel time to and from work is considered part of the workday. Frequently this takes up to four hours round trip. Also, the extended family is extremely important, and any problem in the family requires the soldier to stay at home and personally settle the problem. This causes high absenteeism, thus hampering any effective training that can be planned by our U.S. advisors. There are many other examples which could be presented, however the thrust is the same. There are significant cultural impediments to transferring high tech western systems through our security assistance programs to underdeveloped countries.

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<sup>46</sup>Olds, op. cit., p. 24.

Some anthropologists when examining this question of influencing people to accept high tech identify two basic conditions which can make a difference in the acceptance of the technology. First, all societies and most people will welcome improvement in their economic condition as long as such improvements do not cause more problems than the gains. I pointed out earlier where this can be very difficult to implement due to cultural and political conditions. In some cultures the difficulty in implementation is caused by series of past failures and frustrations. This is the case with our own American Indians. Looking back on Indian history, it is easy to understand their apathy. Tribe after tribe made a real effort to copy white ways when they were placed on reservations. They saw that the old life had ended and did their best to adopt. However, whenever the Indians did succeed the government stepped in and took the gains away. This frustrated the Indians as changing government policies resulted in the loss of their gains. This, in turn, caused apathy to settle in.<sup>47</sup>

We must take into consideration these limitations when trying to advise our friends on how to provide

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<sup>47</sup>Bert F. Hoselitz, The Progress of Underdeveloped Areas (Chicago: The University of Chicago Press, 1952), pp.73-6.

incentives for their highly trained people. A close examination of each country on a case-by-case basis will have to be done before an approach can be engineered. Nevertheless, incentives should be one of our goals in our efforts when assisting Third World countries.

The second factor that was always considered as the aptitude of technicians to handle machinery. There are many humorous stories in the Third World about this very point. In Egypt recruits were introduced to third generation computer driven weapon systems. It was common to see an Egyptian soldier randomly plugging in new circuit boards instead of using the test equipment to find the exact fault and connecting it.<sup>48</sup> It is considered safe to predict that this can be overcome with the proper training and passage of time.<sup>49</sup> In the U.S. there are basic technical schools for our recruits to attend before entering advanced training. In Third World the technical schools play an even more important role. They can assist in overcoming recruits' aptitude deficiencies toward electrical/mechanical skills. This is an essential task as one of the major impediment to technology transfer can be the aptitude toward skills assigned to high tech. These

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<sup>48</sup>Interview with Directorate of International Programs personnel, op. cit.

<sup>49</sup>Hoselitz, op. cit., p. 79.

technical training schools, if structured properly, can go a long way toward alleviating this problem.

Under sufficient pressure, changes can be produced in a culture. Moreover, the means by which can be for technical and scientific groups in the existing social system. In Iran, the pressure for change was so intense as to cause a disruption of the existing system under the Shah which ultimately was doomed to failure and disaster.

The process whereby the U.S. tries to influence a Third World country is an arduous task. Even predicting the outcome is risky. Mr. Melville J. Henskovits says:

To adopt another society to new ways of living involves the formidable process of reshaping basic habits that are manifest both in belief and in behavior. It calls for an induced shift in pre-established ends and a directed reorientation of value systems. It requires, consequently, an intense analysis of the existing relationships among the various aspects of culture--technological, economic, social, educational, political, religious, and aesthetic before any kind of prediction can be made of the results that will follow the disturbance of the balance between them.<sup>50</sup>

The challenge is trying to change modes of living and value systems for Third World people. It is implied that the ends we envisage are superior to those already in force and that their desirability is beyond challenge. Moreover, it is assumed that, when these new values are presented to our friends and allies that have other

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<sup>50</sup> Ibid., p. 90.

traditional approved ends, they must ultimately displace the original values with the new ones. But this cannot be achieved without integrating the new into the old. Moreover, this process of integration can only be suggested, not forced. It will be our friends and allies, in the end that will decide what they will accept and what they will reject. We cannot overtly manipulate them like pawns on a chessboard. Our U.S. security assistance advisors must understand this process and not attempt to force change, but they must influence it.

It is clear that there are formidable cultural impediments to technology transfer in the Third World and prescribing a formula to address these problems is difficult. Our U.S. advisors are ill-equipped to address the cultural implications of their actions. U.S. security assistance programs typically reflect a unilateral approach to the problem. There is little, or no, formal assessment of the cultural implications of introducing a weapon system into the Third World before we start the process. We approach the situation with the mind set that what works in the U.S. will work in the Third World. This approach succeeds in dooming the programs to far less than maximum performance.

In the next chapter we will examine infrastructure problems which should be addressed along with the cultural impediments to high technology transfer.

## CHAPTER V

### INFRASTRUCTURE DEMANDS

Coupled with the cultural impediments to technology transfer in the Third World are some significant additional factors which can substantially influence a country's self-sufficiency and combat capability. These ancillary factors are grouped into a category called infrastructure needs or requirements. Infrastructure requirements necessary to support a high tech weapon system can be very allusive when planning a weapon transfer program.

But what are these allusive items? They are the basic elements of logistics which Westerners take for granted, such as, facilities (reliable utilities, buildings built to Western standards, and facilities operations/maintenance), transportation (worldwide, intra and inter-base), packaging and crating, communications (worldwide, intra and inter-base), and logistics procedures (supply, distribution, and maintenance). The range of non-logistics items include: organizational matters, such as, establishing a headquarters planning function; a manpower system for both officers and non-commissioned officers; and technical institutions for training of recruits, to name only a few. This short list is only a small sample compared to the vast range of infrastructure

requirements which must be dealt with by the USAF when implementing a security assistance program in the Third World.

After the difficult task of identifying the infrastructure requirements in a Third World country program comes the equally difficult task of finding the U.S. agency that can assist in providing these needs, and training our friends and allies in these skills. The USAF's Major Commands have been assigned responsibility for security assistance tasks that parallel their USAF mission, and because of this, are parochial in treatment of non-standard requirements outside their direct sphere of responsibility. Unfortunately, infrastructure requirements can cut across two or more commands, or, even worse, have no command capable of providing the requirement. Obviously when either one of these conditions exist the accomplishment of the mission is thwarted.

The principal infrastructure problem is identification of all the requirements to support the weapon system, be it operational or logistical at the inception of the security assistance program. Our security assistance advisors and institutions are not prepared to handle the magnitude and diversity of requirements. At times our advisors place too much emphasis on defining country needs beyond what is required to do the job. This

can be the "they have to do it our way syndrome" where we supply a high tech article to accomplish a simple job because that is how the USAF does it. In the Third World it is entirely possible, in many instances, to make significant strides toward combat capability with relatively small investments in infrastructure. Therefore, U.S. advisors cannot approach Third World countries with a predetermined formula. A case-by-case study must be made for each country. Flexibility is paramount in this process. In the remaining chapter I will present some Third World infrastructure examples and how they impact on self-sufficiency.

A vital part of the logistics process in our weapon systems is the repair and return of reparable parts. The USAF has a well established worldwide system for distribution, transportation, tracking, and packaging and crating to accomplish this critical task. This is absolutely critical as the reparable parts are usually high dollar items, and critical to combat capability. Turnaround time is essential to minimize stock dollar investment in these items. Also, and most importantly, the expeditious movement of reparables is critical to maintaining aircraft sortie rates. In the Third World this function is made more difficult because distance to the repair source is typically longer on the average, and

large investment in high dollar stocks cannot be afforded by these Third World countries. The challenge for the U.S. advisor is designing a system that can pack, crate, ship, and track these assets intra and inter-country. This may sound simple, but it is not.

When the Egyptian program was started, it was not too long to see high value assets sitting around waiting for packing at the Egyptian bases because there was no packing material available nor were there Egyptians trained to pack these items. The Soviet MIGs the Egyptians possessed had not required returning reparable parts to the Soviet Union. The Soviet advisors had taken care of all logistics functions in this area. The Egyptians had no experience when it came to reparable parts, they were issued the necessary parts by the Soviets. There were no vehicles to move the items off base to the next distribution site. There are many stories about Egyptian soldiers hitchhiking from their operational base with a spare part to a depot center or vice versa. This also occurred on a regular basis when paperwork had to be sent to higher headquarters, because there was no distribution system or mail system to the operational bases. Exasperating the situation was the need to get higher headquarters approval in writing for

routine logistics transactions.<sup>51</sup> Our U.S. advisors when advising countries on weapon system needs have typically overlooked requirements like these, expecting to find an established system already working.

Another infrastructure example, is the need to assist underdeveloped countries in developing modern doctrine, tactics, strategy, and a staff planning function to support high tech weapons. Who should be responsible for this? It is the Tactical Air Command that provides a substantial portion of the pilot training, and possesses the needed expertise in this area. But the flying training is narrowly defined, and Tactical Air Command skilled advisors are limited. Unfortunately, the knowledge is needed by foreign air forces attempting to cope with high performance aircraft (F-16s and F-15s) and the associated required capabilities for the first time.

In short, the U.S. is either committed to the success of programs in the Third World as part of the U.S.'s foreign policy, or foreign policy objectives should be more carefully examined to determine negative impacts before the transfer of high tech weapon systems. This last point is outside the scope of this paper, but has to be considered and balanced against program success in the form

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<sup>51</sup> Olds, op. cit.

of meeting our foreign policy objectives. It will do little good if only short-term foreign policy objectives are met, while in the long run countries become disenchanted with the performance of U.S. purchased weapon systems which they cannot maintain, or utilize fully.

The third example is the need for sophisticated facilities to support high tech weapon systems. We typically take for granted in the West that building systems, i.e. electrical/mechanical items, will work according to design requirements. This is not true in the Third World. Again and again this problem has caused complete shutdown of a system. As an example, building specifications are designed in the U.S. using Western standards which are then turned over to a Third World contractor which simply has little expertise to implement the design. The results can be disastrous to the program. The U.S. Air Force Logistics Command in conjunction with the U.S. Army's Corps of Engineers has the ability to design and construct facilities world-wide in support of a weapon sale. However, this is an expensive process, and one some countries like Egypt avoid preferring to use their own contractors.

Another facilities' problem is the need to operate and maintain these facilities. In many cases the operation and maintenance generated by these "high tech" buildings

(maintaining environmental and mechanical systems) cannot be found in the recipient country. These facilities, once built, are the most sophisticated buildings in the recipient's armed forces, and probably the only ones in the world. Countries have not developed a need for sophisticated environmentally controlled buildings; in their civilian sectors and, therefore, do not have any experience or available trained human resources to support the requirement. Again, as with other infrastructure requirements, this requirement has to be identified during program development, and training provided. Additionally, building maintenance operating costs are a new phenomenon in the Third World, and budget allocations for this purpose frequently have neither been considered, nor made. Once again, which organization should identify these requirements to the country before the sale? In the past, this has been a secondary consideration, at best, and there is no one USAF Major Command responsible for working with the client on the budget planning process, on facilities maintenance. Nevertheless, the requirement must be satisfied for program success.

There are also cases where countries have had no resources (national funds) to procure common building maintenance items, such as, light bulbs, filters, etc. In the Third World a double constraint exists: local resources

to purchase the item and the local availability of the item. This necessitates supplying common items from the U.S. to the underdeveloped country, and funding their procurement from EEC credit funds. There is no package available to accomplish this, and any effort is ad hoc, time consuming, and expensive.

There are numerous infrastructure examples which a case could be made for. However, it is not the intention in this paper to systematically catalog all items that could be included under the title infrastructure, but rather, call attention to the need for a systematic approach to identify these requirements. I've shown that infrastructure requirements cut across all areas: doctrine, tactics, planning, facilities, transportation, communications, manpower systems, logistics systems and procedures, and training.

Infrastructure is a group of needs, which unlike cultural impediments, the USAF has more control over if we develop methods to deal with this problem. This group cannot be ignored, and a systematic approach must be developed to maximize our different capabilities to meet these needs. This is especially true when considering the cultural impediments that we have little control over in the Third World, and which have a significant influence on our success.

## CHAPTER VI

### CONCLUSIONS AND POLICY IMPLICATIONS

There are significant policy considerations that should be examined with regard to our Third World security assistance programs. In this paper, I have examined Third World security assistance programs from the current worldwide sales trends to the cultural impediments to technology transfer. I've compared the U.S. and Soviet security assistance programs, raising for scrutiny the question of the major differences between these two systems, i.e. self-sufficiency versus dependency. It is the U.S.'s objective toward providing self-sufficiency to our friends and allies which tax the U.S. system. To do this properly, the U.S. must select a weapon system for a particular need that is most appropriate for the country. This means the selected weapon system has to have been selected taking into account local technical, economic, labor, social, cultural, and psychological conditions in order to enhance the chance of weapon system absorption. Unfortunately, the USAF has few choices from its active inventory to meet Third World weapon system demands. All the current systems are on the high end of the technology spectrum, i.e. F-15 and F-16 aircraft.

Given limited USAF weapon system choices for the Third World, it is certain that large numbers of contractor

and USAF personnel will be required to support the high tech systems we sell. Self-sufficiency can only be achieved when the recipient country can function without a large scale U.S. presence. The record shows repeated extensions of U.S. advisors in Egypt for the F-4 and F-16 aircraft programs and again recently for the U.S. F-16 advisory team in Venezuela. In Saudi Arabia, this situation has existed for some time with the largest concentration of U.S. military advisors and contractors of all our security assistance programs. Unlike many Third World countries Saudi Arabia has the financial resources which enable them to employ large numbers of advisors for their programs. In the Third World, the limited trained manpower resource will continue to defeat our attempts to help our clients toward self-sufficiency. The only long-term solution for this problem is to build-up trained manpower levels over an extended (5-10 years) period of time.

The U.S. security assistance program cannot solve endemic Third World problems ,i.e. cultural impediments to technology transfer and the shortage of trained manpower. What can be done in the short-term is to focus on the security assistance requirements within our span of control. These can range from organizing the country's planning function at the military service headquarters level to establishing an aerial port facility. Any real

success in the Third World toward self-sufficiency cannot be made without the USAF maximizing what is in its control. The other Third World impediments to technology transfer will exist for an extended time, and are, for the most part, not within the boundaries of USAF's control. Cultural impediments to technology transfer cannot be influenced in the short run. Anthropologists have argued among themselves for some time on the possibilities of influencing technology transfer in the Third World, nevertheless there have been only mixed results at achieving positive results.

To achieve success with variables under U.S. control, a much more comprehensive approach to doing business with the Third World must be developed. This approach must start from the front end of the weapon sale planning process, and extend to program implementation.

Assessments must be made to catalog both cultural and political impediments. These impediments should be kept to the forefront by all members of the USAF team (surveys, in-country advisors, and embassy teams). The USAF's initial in-country survey team is the key to this assessment. It must be broadened to not only scrutinize the direct weapon system support requirements, but also, the total infrastructure elements needed for the weapon system. In pursuit of this objective, such an assessment cannot be

done with a small survey team or on the back of an envelope. Defense Department officials often demand immediate data from the Services when a sale is being contemplated. Usually when the process is accelerated, any estimates given for a Third World proposed sale are subject to gross miscalculations.

What must take place is the development of a methodology so that these survey teams can function in a systematic manner. Detailed checklists covering the entire spectrum of requirements should be developed. The survey teams can then use these checklists to collect and bring the information back to the appropriate command for analysis. The analysis should include the cultural impediments, if any, associated with the proposed sale. This information must then be properly assessed and then forwarded to the Air Staff. These initial and follow-up surveys are critical to starting the program properly. Moreover, the program's chance for success cannot be estimated until all factors can be analyzed. Realistic price and availability data cannot be established and presented to the customer unless these initial surveys and subsequent analysis produce a total package that can support the system in-country.

Following the initial survey, the data must be collated and analyzed by a CONUS organization which is

specifically trained to handle and assess Third World limitations and needs. Currently there is no USAF organization which has this focus. This critical function could possibly be contracted out if a contractor was developed to provide this service. This contractor would have to draw from a range of assets throughout the public and private sectors when designing a weapon system program for a Third World country. The most difficult area is that of addressing infrastructure requirements. Finding the existing U.S. agency with expertise in providing this service will be difficult, or this too could be contracted out. Innovative approaches will have to be used in addressing infrastructure shortfalls in the Third World, such as, establishing contractor support packages for areas where the USAF cannot provide the needed expertise and support. These contractor support packages should be structured without regard to the prime weapon system contractor. This has been successfully done in Saudi Arabian programs. In-house USAF capabilities should be utilized whenever possible to save costs, but contractor support should also be an option.

The down side of this is the program's total cost. Adding infrastructure support to a Third World country program will add substantially to the weapon system cost. Countries that are not "cash rich" will not be able to

purchase the quantity of end items they desire if the true program cost is presented to them. Policy makers will find this difficult; but ultimately the support must be supplied if self-sufficiency is to be achieved and our foreign policy objectives met.

And finally, the in-country team expertise will have to be significantly changed to meet the total requirements for Third World countries. Typically the U.S. country team and Technical Assistance Field Teams (TAFTs) are focused on the direct weapon system support requirement. Other expertise will have to be added if a broader range of support is to be adopted for Third World sales. Mr. Jahangir Amuzegar in his case study on Iran suggests six key security assistant traits needed for an effective advisor.

First, it is technical skill and competence in one's discipline; second, dedication and enthusiasm for one's mission; third, an ability to communicate with people in other countries; fourth, empathy and adaptability to other cultures; fifth, a capacity for leadership and organization in an unfamiliar environment; and sixth, a talent for maneuverability in the face of new impediments. In short, foreign assistants should be endowed with qualities for character, understanding and adaptability far beyond what is considered indispensable in their own country.<sup>52</sup>

Providing USAF technicians with these skills is especially difficult. The USAF would have to develop a cadre assigned

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<sup>52</sup> Jahangir Amuzegar, Technical Assistance in Theory and Practice The Case of Iran (New York: Frederick A. Praeger Publishers, 1966), p. 210.

especially for this mission. This is not practical in an environment of shrinking manpower and budget levels. Failing this, the only other alternative is establishing a contractor based system. Providing USAF personnel that are not equipped to handle the demands in the Third World can do long-term harm to these programs. It would be far better to provide skilled technicians that are trained for the environment of the Third World.

We simply cannot achieve success in meeting our foreign policy objectives without designing a process in light of the total system requirements, and the needs that are generated from the introduction of high technology into the Third World. Each country will have to be examined on a case-by-case basis; not on an ad hoc basis, but rather, a systematic approach routinized within the USAF and Department of Defense.

Without a more comprehensive approach high tech weapon system programs in the Third World will produce mediocre results, at best. The result will be that U.S. military advisory and defense contractor teams will be forced to remain in-country much longer than the USAF, or the customer wants, and this will drain off capital needed for other projects. Ultimately our friends and allies will become disenchanted, and our long-term objectives will be in jeopardy.

The USAF is faced with an unprecedented challenge in the Third World. Only a comprehensive approach offers any hope for success, especially in the face of so many Third World constraints that are beyond our control.

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